6178619540 -> Research Foundation; Page 3

978 934 4043;# 3/ 4

SENT BY: HBS&R

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HAMILTON, BROOK, SMITH & REYNOLDS, P.C.

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Application Number	09/994,998
Filing Date	November 27, 2001
First Named Inventor	Sukant Tripathy
Group Art Unit	1614
Examiner Name	not assigned
Attorney Docket Number	2328.2003-001

Title

POLYMERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN

I/We	hereby appoint
[X]	the attorneys/agents associated with Customer No. 021005
[]	Practitioner(s) named below:
25 00	ways atternavalagents to presecute the application identified above, and to transpot all hypinoen in the United
State	y/our attorneys/agents to prosecute the application identified above, and to transact all business in the United is Patent and Trademark Office connected therewith.
The c	correspondence address for the above-identified application is:
[X]	Customer Number 021005
	Hamilton, Brook, Smith & Reynolds, P.C.
i	530 Virginia Road
	P.O. Box 9133
	Concord, Massachusetts 01742-9133
[]	Other
Pleas	se direct all telephono calls and facsimiles to:
Name	e N. Scott Pierce Tel. No. 978-341-0036 Fax No. 978-341-0136
I am 1	tha
r 1	
ſ J	Applicant/Inventor.
[]	Authorized representative of the Assignee of the entire interest. See 37 C.F.R. 3.71. A Statement under 37 C.F.R. §3.73(b) is enclosed.
rv:	Authorized appropriative of an engineer together with the Covernment of the United States, as respected
[X]	Authorized representative of an assignee together with the Government of the United States, as represented by the Secretary of the Army, of the entire interest. A separate Statement under 37 C.F.R. § 3.73(b) is enclosed.
	SIGNATURE of Applicant or Assignee of Record
Name	Louis J. Petrovic, Ph. 19
Signa	ture Louds H Strovic
Date	1/7/25/02
	· · · · · · · · · · · · · · · · · · ·
ſX]	Total of [2] forms are submitted.

SENT BY: HBS&R

6178619540 -> Research Foundation; Page 4

978 934 4043;# 4/ 4

Docket No. 2328.2003-001

Applic	ants: <u>St</u>	ikant Finanthe Deceased), Lynne A. S.	amuelson, Ferdinando <u>Bruno, Sucharita Roy, Ram</u> aswamy Nagarajan, Jayan
Kumar	, Bon-C		· ·
Applic	ation No	o.: <u>09/994,998</u>	Filed: November 27, 2001
For:	POLY		NOMERS USING DERIVATIVES OF HEMATIN
	Univer	sity of Massachusetts Lowell	, a university
		(Name of Assignee)	(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)
states t	hat it is		
A.	[]	the assignee of the entire right, title	and interest in the patent application identified above; or
В.	[X]		ent of the United States, as represented by the Secretary of the Army, of the patent application identified above. A separate Statement under 37 CFR §
The rig	ht, title	and interest of the above-named assign	ce in the patent application identified above is established by virtue of:
A . [X]			tent application identified above. The assignment was recorded in the Patent, Frame, or a copy thereof is attached.
OR			
В. []	A chai	in of title from the inventor(s) of the pa	tent application identified above, to the current assignee as shown below:
•	1.	From:	To:
		The document was recorded in the i	atent and Trademark Office at
		Reel, Frame	, or a copy thereof is attached.
	2.	From:	To: Patent and Trademark Office at
		Reel, Frame	, or a copy thereof is attached.
	3.	From:	To:
		The document was recorded in the P Reel, Frame	
	[] A	dditional documents in the chain of titl	e are listed on a supplemental sheet.
The un	lersigne	d (whose title is supplied below) is autl	norized to act on behalf of the assignee.
		-6-1-	
Date:		7/25/02	
Name:_		Louis J. Petrovic, Ph.D.	
Title: I	Director	of External Funcing Technology Trans	sfer & Partnering
Signatu	J	Total Land	



Joint

WHEREAS, I, Lynne A. Samuelson and Ferdinando F. Bruno, along with Sukant Tripathy, Sucharita Roy, Ramaswamy Nagarajan, Jayant Kumar, Bon-Cheol Ku and Soo-Hyoung Lee, have invented a certain improvement in POLYMERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN, described in an application for Letters Patent of the United States, the specification of which:

[]	is being executed on even date herewith and is about to be filed in the United States Patent Office;
[X]	was filed on November 27, 2001 as Application No. 09/994,998;
[]	was patented under U.S. Patent No. [] on [].

WHEREAS, the Government of the United States, as represented by the Secretary of the Army (hereinafter "ASSIGNEE") desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein; provided that if the Government determines not to cause an application to be filed in any particular foreign country or fails to make such a determination, within the said eight months, all right, title and interest in the invention in such foreign country shall remain in me (us), subject to a nonexclusive, irrevocable, royalty-free license to the Government in any patent which may issue on the invention in such foreign country, including the power to issue sublicenses for use in behalf of the Government and/or furtherance of the foreign policies of the Government;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

	·
	Inventor Lynne A. Samuelson Date May 9, 200 2
	Address 21 McDonough Drive, Marlborough MA 01752
Witness Address Witness Address	COMMONWEALTH OF MASSACHUSETTS COUNTY OF MIDDLESEX ON THIS 9TH DAY OF MAY, 2002, LYNNE A SAMUELSON PERSONALLY APPEARED BEFORE ME, WHOSE IDENTITY I PROVED ON THE BASIS OF HER MASSACHUSETTS. DRIVERS LIC. TO BE THE SIGNER OF THE ABOVE DOCUMENT AND SHE ACKNOWLEDGED THAT SHE SIGNED IT WILLINGLY
	BRIAN P. WEBER Notary Public Commonwealth of Massachusetts My Commission Expires May 19, 2006

Inventor's Signature:
State/Commonwealth of Massachuse + 5
County of Middlesey
Then personally appeared before me the above-named Ferdinando F. Bruno and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this
(SEAL) Notary Public (print name)
My Commission expires 09 / 22 /06

@PFDesktop\::ODMA/MHODMA/iManage;285066;1

TERESA CROUSE Notary Public Commonwealth of Massachusetts My Commission Expires September 22, 2006

WHEREAS, we, Sukant Tripathy, Sucharita Roy, Ramaswamy Nagarajan, Jayant Kumar, Bon-Cheol Ku and Soo-Hyoung Lee, along with Lynne A. Samuelson and Ferdinando F. Bruno, have invented a certain improvement in POLYMERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN, described in an application for Letters Patent of the United States, the specification of which:

[]	is being executed on even date herewith and is about to be filed in the United States Patent Office;
[X]	was filed on November 27, 2001 as Application No. 09/994,998;
[]	was patented under U.S. Patent No. [] on [].

WHEREAS, University of Massachusetts Lowell (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at One University Avenue, Lowell, MA 01854 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application. together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, inc luding the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature:		ant Tripathy (Deceased)
State/Commonwealth	Susan Tripathy, as I	Executrix of the Estate of Sukant Tripathy Aministratrix
of MA		_
County of Middl	esex	_
Then personally appeared the he/she executed the foregoing of 344		amed Susan Tripathy and acknowledged that her free act and deed this day
(SEAL)	polles	Notary Public
	Monista 1	Lallote (print name)
	My Commission exp	pires 10/31/08

55 2-18-02

	_
Inventor's Signature:	
State/Commonwealth Sucharita Roy	
of Massachusetts	
County of Middlesex	
Then personally appeared before me the above-named Sucharita Roy and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this 19th day of July , 20 02 . (SEAL) Lila A. Lorrey	
Inventor's Signature:	
State/Commonwealth Ramaswamy Nagarajan	
of Massachusetts	
County of Middlesex	
County of Middlesex	
Then personally appeared before me the above-named Ramaswamy Nagarajan and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this 28th day of June , 2002. (SEAL) Notary Public (print name) My Commission expires 06/07/2007.	

Inventor's Signature:	Akuman
State/Commonwealth	Jayant Kumar
	V
of <u>Massachusetts</u>	
County of Middlesex	
	before me the above-named Jayant Kumar and acknowledged that soing instrument as his/her free act and deed this second day 2002 Lila A. Lorrey (print name) My Commission expires 06 / 07 / 2007.
Inventor's Signature:	
	Bon-Cheol Ku
State/Commonwealth	
State/Commonwealth of	
State/Commonwealth of	
State/Commonwealth of County of Then personally appeared	before me the above-named Bon-Cheol Ku and acknowledged that oing instrument as his/her free act and deed this day
State/Commonwealth of County of Then personally appeared he/she executed the foreg	before me the above-named Bon-Cheol Ku and acknowledged that oing instrument as his/her free act and deed this day
State/Commonwealth of County of Then personally appeared he/she executed the foreg of	before me the above-named Bon-Cheol Ku and acknowledged that oing instrument as his/her free act and deed this day, 20
State/Commonwealth of County of Then personally appeared he/she executed the foreg of	before me the above-named Bon-Cheol Ku and acknowledged that oing instrument as his/her free act and deed this day, 20 Notary Public

.

State/Commonwealth	Jayant Kumar
of	·
Then personally appeare he/she executed the foregot	d before me the above-named Jayant Kumar and acknowledged that going instrument as his/her free act and deed this day 20
(SEAL)	Notary Public
	(print name)
	My Commission expires//
Inventor's Signature:	海
State/Commonwealth	Bon-Cheol Ku
of MASS TELLANS	WITC
County of MiDDC	· · · · · · · · · · · · · · · · · · ·
	before me the above-named Bon-Cheol Ku and acknowledged that

Inventor's Signature:	-monf	lee
	Soo-Hyo	ung Lee
State/Commonwealth		_
of Massachusetts		·
County of Saffolk		
Then personally appeared before me the above that he/she executed the foregoing instrument day of May 13, 2001.	t as his/her free	
(SEAL) (atherine matar)	Mck brayh	Notary Public
CATHERIAE MA	TON-MCDONIX	h(print name)
My Commission	_	108 12007

<u>ASSIGNMENT</u>

WHEREAS, we, Sukant Tripathy, Sucharita Roy, Ramaswamy Nagarajan, Jayant Kumar, Bon-Cheol Ku and Soo-Hyoung Lee, along with Lynne A. Samuelson and Ferdinando F. Bruno, have invented a certain improvement in POLYMERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN, described in an application for Letters Patent of the United States, the specification of which:

[]	is being executed on even date herewith and is about to be filed in the United States Patent Office;
[X]	was filed on November 27, 2001 as Application No. 09/994,998;
[]	was patented under U.S. Patent No. [] on [].

WHEREAS, University of Massachusetts Lowell (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at One University Avenue, Lowell, MA 01854 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America. its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature:	Susan Tripa thy Sukant Tripathy (Deceased)
State/Commonwealth ofA	Susan Tripathy, as Executrix of the Estate of Sukant Tripathy Administrativy 7-18-0
County of Mide	dlesex
Then personally appeared he/she executed the foregood	before me the above-named Susan Tripathy and acknowledged that bing instrument as his/her free act and deed this day, 2002
(SEAL)	The Notary Public
,	May 3 ha halloha (print name)
•	My Commission expires 10 /3/ /08

Inventor's Signature:	
Sucharita Roy	
State/Commonwealth	
of Massachusetts	
County of Middlesex	
Then personally appeared before me the above-named Sucharita Roy and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this 19th day of July, 2002. (SEAL) (SEAL)	
Lila A. Lorrey (print name)	
My Commission expires 06 / 07 / 2007.	
Inventor's Signature:	
Ramaswamy Nagarajan	
State/Commonwealth	
of Massachusetts	
County of Middlesex	
edulty of Middlesex	
Then personally appeared before me the above-named Ramaswamy Nagarajan and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this	
(SEAL) Sila G. July Notary Public	
Lila A. Lorrey (print name)	
My Commission expires 06 / 07 / 2007.	

Inventor's Signature:	Skeiman
-	Jayant Kumar
State/Commonwealth	
of <u>Massachusetts</u>	
County of Middlesex	
Then personally appeared b he/she executed the foregoin ofJuly	efore me the above-named Jayant Kumar and acknowledged that ng instrument as his/her free act and deed this <u>second</u> day 2002.
(SEAL)	Tila J. Harry Public
	/Lila A. Lorrey / (print name)
	My Commission expires 06 / 07 /2007.
T	
Inventor's Signature:	Pon Chool Ku
Inventor's Signature: State/Commonwealth	Bon-Cheol Ku
State/Commonwealth	
State/Commonwealth of	
State/Commonwealth of	
State/Commonwealth of County of Then personally appeared b	efore me the above-named Bon-Cheol Ku and acknowledged that ng instrument as his/her free act and deed this day
State/Commonwealth of County of Then personally appeared b he/she executed the foregoin	efore me the above-named Bon-Cheol Ku and acknowledged that ng instrument as his/her free act and deed this day
State/Commonwealth of County of Then personally appeared b he/she executed the foregoin of	efore me the above-named Bon-Cheol Ku and acknowledged that ng instrument as his/her free act and deed this day, 20 Notary Public
State/Commonwealth of County of Then personally appeared b he/she executed the foregoin of	efore me the above-named Bon-Cheol Ku and acknowledged that ng instrument as his/her free act and deed this day, 20 Notary Public (print name)
State/Commonwealth of County of Then personally appeared b he/she executed the foregoin of	efore me the above-named Bon-Cheol Ku and acknowledged that ng instrument as his/her free act and deed this day, 20 Notary Public

Inventor's Signature:	
State/Commonwealth	Jayant Kumar
County of	
	d before me the above-named Jayant Kumar and acknowledged that going instrument as his/her free act and deed this day 20
(SEAL)	Notary Public
	(print name)
	My Commission expires/
Inventor's Signature:	in the second
Charter / C 141-	Bon-Cheol Ku
State/Commonwealth	1760
of MASSACHUS	•
County of MODDL	ns no
	before me the above-named Bon-Cheol Ku and acknowledged that oing instrument as his/her free act and deed this, 20 day, 20

Inventor's Signature:	Sov-Hyrung Lee
	Soo-Hyoung Lee
State/Commonwealth	-
of Massachusetts	
County of Suffolk	
that he/she executed the foregoiday of 5/13 (SEAL) (AT	we me the above-named Soo-Hyoung Lee and acknowledged ing instrument as his/her free act and deed this, 20 02 Notary Public MATON-NC DONOLGY (print name) Y Commission expires 03/08/2007

LEGAL;# 3/ 4

MILTON, BROOK, SMITH & REYNOLDS, P.C.

AUG D 5 2002

POWER OF ATTORNEY OR AUTHORIZATION OF AGENT AND **CORRESPONDENCE ADDRESS**

Application Number	09/994,998	
Filing Date	November 27, 2001	
First Named Inventor	Sukant Tripathy	
Group Art Unit	1614	
Examiner Name	not assigned	
Attorney Docket Number	2328.2003-001	

Title

POLYMERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN

I/We hereby appoint
[X] the attorneys/agents associated with Customer No. 021005
[] Practitioner(s) named below:
as my/our attorneys/agents to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.
The correspondence address for the above-identified application is:
[X] Customer Number 021005
Hamilton, Brook, Smith & Reynolds, P.C.
530 Virginia Road
P.O. Box 9133
Concord, Massachusetts 01742-9133
[] Other
Please direct all telephone calls and facsimiles to:
Name N. Scott Pierce Tel. No. 978-341-0036 Fax No. 978-341-0136
I am the:
[] Applicant/Inventor.
[] Authorized representative of the Assignee of the entire interest. See 37 C.F.R. 3.71. A Statement under 37 C.F.R. §3.73(b) is enclosed.
[X] Authorized representative of an assignee together with University of Massachusetts Lowell of the entire interest. A separate Statement under 37 C.F.R. § 3.73(b) is enclosed.
SIGNATURE of Applicant or Assignee of Record
Name Vincent J. Ranucci, Esq.
Signature / we ent I Canucy
Signature //we and II (annex)

Docket No. 2328.2003-001

STATEMENT UNDER 37 C.F.R. § 3.73(b)

		ant Tripathy (Deceased), Lynne A. Samuelson, Ferdinando Bruno, Sucharita Roy, Ramaswamy Nagarajan, Jayani
Kumar,	Bon-Che	eol Ku, and Soo-Hyoung Lee
		09/994,998 Filed: November 27, 2001
For:	POLY	MERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN
Govern	ment of t	he United States, as represented by the Secretary of the Army, a Government agency (Name of Assignee). (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)
states th	nat it is	
A.	[]	the assignce of the entire right, title and interest in the patent application identified above; or
B.	[X]	an assignce together with University of Massachusetts Lowell of the entire right, title and interest in the patent application identified above. A separate Statement under 37 CFR § 3.73(b) is being submitted.
The rig	ht, title a	nd interest of the above-named assignee in the patent application identified above is established by virtue of:
A. [X]	An assi and Tra	gnment from the inventor(s) of the patent application identified above. The assignment was recorded in the Patent ademark Office at Reel, Frame, or a copy thereof is attached.
OR		
в.[]	A chair	of title from the inventor(s) of the patent application identified above, to the current assignce as shown below:
•	1.	From: To: The document was recorded in the Patent and Trademark Office at
		The document was recorded in the Patent and Trademark Office at Reel, Frame, or a copy thereof is attached.
		Reel, Flanc, of a copy thereon to ended.
	2.	From:To:
		The document was recorded in the Patent and Trademark Office at Reel, Frame, or a copy thereof is attached.
	3.	From: To:
		The document was recorded in the Patent and Trademark Office at
	[] A	Reel, Frame, or a copy thereof is attached. dditional documents in the chain of title are listed on a supplemental sheet.
	. ,	
The un	dersignee	d (whose title is supplied below) is authorized to act on behalf of the assignee.
Date:_	10	Ly 25, 2002
Name:		Vincent J. Ranucci, Esq.
Title:_	Pe	ATENT ATTORNEY
' Signati	ure:	Ment J. Ranucar



WHEREAS, I, Lynne A. Samuelson and Ferdinando F. Bruno, along with Sukant Tripathy, Sucharita Roy, Ramaswamy Nagarajan, Jayant Kumar, Bon-Cheol Ku and Soo-Hyoung Lee, have invented a certain improvement in POLYMERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN, described in an application for Letters Patent of the United States, the specification of which:

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[X]	was filed on November 27, 2001 as Application No. 09/994,998;
[]	was patented under U.S. Patent No. [] on [].

WHEREAS, the Government of the United States, as represented by the Secretary of the Army (hereinafter "ASSIGNEE") desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America. its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein; provided that if the Government determines not to cause an application to be filed in any particular foreign country or fails to make such a determination, within the said eight months, all right, title and interest in the invention in such foreign country shall remain in me (us), subject to a nonexclusive, irrevocable, royalty-free license to the Government in any patent which may issue on the invention in such foreign country, including the power to issue sublicenses for use in behalf of the Government and/or furtherance of the foreign policies of the Government;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving of testimony in any interference or other proceeding in which said invention or any application or patent directed thereto may be involved;

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

	Inventor June A. Samuelson Date May 9, 200 =
	Address 21 McDonough Drive, Marlborough MA 01752
Witness	COUNTY OF MASSACHUSETTS COUNTY OF MIDDLESEX ON THIS 9TH DAY OF MAY, 2002, LYNNE A SAMUELSON
Address	PERSONALLY APPEARED BEFORE ME, WHOSE IDENTITY I PROVED ON THE BASIS OF HER MASSACHUSETTS.
Witness	DRIVERS LIC. TO BE THE SIGNER OF THE ABOVE DOCUMENT AND SHE ACKNOWLEDGED THAT SHE SIGNED IN WILLINGLY
Address	Bundly
-	BRIAN P. WEBER Notary Public Commonwealth of Massashusetts My Commission Expires May 19, 2006

Inventor's Signature:
State/Commonwealth
of Massachusetts
County of Middlesex
Then personally appeared before me the above-named Ferdinando F. Bruno and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this
LERESA CROUSE (print name)
My Commission expires <u>09 / 22 / 06</u>

@PFDesktop\::ODMA/MHODMA/iManage;285066;1

IERESA CROUSE
Notary Public
Commonwealth of Massachusetts
My Commission Expires
September 22, 2006

WHEREAS, we, Sukant Tripathy, Sucharita Roy, Ramaswamy Nagarajan, Jayant Kumar, Bon-Cheol Ku and Soo-Hyoung Lee, along with Lynne A. Samuelson and Ferdinando F. Bruno, have invented a certain improvement in POLYMERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN, described in an application for Letters Patent of the United States, the specification of which:

[]	is being executed on even date herewith and is about to be filed in the United States Patent Office;
[X]	was filed on November 27, 2001 as Application No. 09/994,998;
[]	was patented under U.S. Patent No. [] on [].

WHEREAS, University of Massachusetts Lowell (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at One University Avenue, Lowell, MA 01854 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, inc luding the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature:	Susan Trips Phy Sukant Tripathy (Deceased)
State/Commonwealth	Susan Tripathy, as Executrix of the Estate of Sukant Tripathy Administratrix
of MA	
County of Middl	esex
he/she executed the foregoi of 3uy	refore me the above-named Susan Tripathy and acknowledged that ang instrument as his/her free act and deed this day, 20
(SEAL)	Motary Public Notary Public
	Monista Malliota (print name)
•	My Commission expires $\frac{10}{31}$
	· · · · · · · · · · · · · · · · · · ·

5T 2-18-02

Inventor's Signature:
State/Commonwealth Sucharita Roy
of Massachusetts
County of Middlesex
Then personally appeared before me the above-named Sucharita Roy and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this19thday of
Inventor's Signature:
Ramaswamy Nagarajan State/Commonwealth
ofMassachusetts
County of Middlesex
Then personally appeared before me the above-named Ramaswamy Nagarajan and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this ay of
My Commission expires <u>06 / 07 / 2007</u> .

Inventor's Signature:	Javant Kumar
State/Commonwealth	Jayant Kumar
of <u>Massachusetts</u>	3
County of Middlesex	<u> </u>
Then personally appeare he/she executed the fore of	d before me the above-named Jayant Kumar and acknowled ged that going instrument as his/her free act and deed this second day 2002 Lila A. Lorrey (print name) My Commission expires 06 / 07 / 2007.
nventor's Signature:	· .
	Bon-Cheol Ku
State/Commonwealth	
Inventor's Signature: State/Commonwealth of County of	Bon-Cheol Ku
State/Commonwealth of County of Then personally appeared the foregot	d before me the above-named Bon-Cheol Ku and acknowledged that going instrument as his/her free act and deed this day, 20
State/Commonwealth of County of Then personally appeared ne/she executed the foreg	d before me the above-named Bon-Cheol Ku and acknowledged that going instrument as his/her free act and deed this day, 20 Notary Public
State/Commonwealth of County of Then personally appeared the foregot	d before me the above-named Bon-Cheol Ku and acknowledged that going instrument as his/her free act and deed this day, 20

- 1	Jayant Kumar
State/Commonwealt	
County of	
ne/she executed the	eared before me the above-named Jayant Kumar and acknowledged that foregoing instrument as his/her free act and deed this day
of	20
SEAL)	Notary Public
	(print name)
	My Commission expires / /
	4.0
nventor's Signature:	游见
· ·	Bon-Cheol Ku
State/Commonwealtl	Bon-Cheol Ku
State/Commonwealth	Bon-Cheol Ku h
nventor's Signature: State/Commonwealtl ofM_ASS_ASA County ofM_O	Bon-Cheol Ku h

Inventor's Signature:	Sv -10	youf	lee
State/Commonwealth of Manachusett	,	Soo-Hyoun	ig Lee
County of Suffoll	<u> </u>		
Then personally appeared that he/she executed the day of May 13	d before me the above-nar foregoing instrument as h	med Soo-Hy is/her free ac	voung Lee and acknowledged ct and deed this
(SEAL)	Catherine mater mck	brough	Notary Public
·	CATHERINE MATON-	-McDonouby	(print name)
	My Commission expi	res <u>Ø3</u> /	08 12007

<u>ASSIGNMENT</u>

WHEREAS, we, Sukant Tripathy, Sucharita Roy, Ramaswamy Nagarajan, Jayant Kumar, Bon-Cheol Ku and Soo-Hyoung Lee, along with Lynne A. Samuelson and Ferdinando F. Bruno, have invented a certain improvement in POLYMERIZATION OF AROMATIC MONOMERS USING DERIVATIVES OF HEMATIN, described in an application for Letters Patent of the United States, the specification of which:

[]	is being executed on even date herewith and is about to be filed in the United States Patent Office;
[X]	was filed on November 27, 2001 as Application No. 09/994,998;
[]	was patented under U.S. Patent No. [] on [].

WHEREAS, University of Massachusetts Lowell (hereinafter "ASSIGNEE"), a corporation organized and existing under the laws of the Commonwealth of Massachusetts, and having a usual place of business at One University Avenue, Lowell, MA 01854 desires to acquire an interest therein in accordance with agreements duly entered into with us;

NOW, THEREFORE, to all whom it may concern be it known that for and in consideration of said agreements and of other good and valuable consideration, the receipt of which is hereby acknowledged, we have sold, assigned and transferred and by these presents do hereby sell, assign and transfer unto said ASSIGNEE, its successors, assigns and legal representatives, the entire right, title and interest in and throughout the United States of America, its territories and all foreign countries, in and to said invention as described in said application, together with the entire right, title and interest in and to said application and such Letters Patent as may issue thereon; said invention, application and Letters Patent to be held and enjoyed by said ASSIGNEE for its own use and behalf and for its successors, assigns and legal representatives, to the full end of the term for which said Letters Patent may be granted as fully and entirely as the same would have been held by us had this assignment and sale not been made; we hereby convey all rights arising under or pursuant to any and all international agreements, treaties or laws relating to the protection of industrial property by filing any such applications for Letters Patent. We hereby acknowledge that this assignment, being of the entire right, title and interest in and to said invention, carries with it the right in ASSIGNEE to apply for and obtain from competent authorities in all countries of the world any and all Letters Patent by attorneys and agents of ASSIGNEE's selection and the right to procure the grant of all such Letters Patent to ASSIGNEE for its own name as assignee of the entire right, title and interest therein;

AND, we hereby further agree for ourselves and our executors and administrators to execute upon request any other lawful documents and likewise to perform any other lawful acts which may be deemed necessary to secure fully the aforesaid invention to said ASSIGNEE, its successors, assigns and legal representatives, but at its or their expense and charges, including the execution of applications for patents in foreign countries, and the execution of substitution, reissue, divisional or continuation applications and preliminary or other statements and the giving

AND, we do hereby authorize and request the Commissioner of Patents of the United States to issue such Letters Patent as shall be granted upon said application or applications based thereon to said ASSIGNEE, its successors, assigns, and legal representatives.

IN TESTIMONY WHEREOF, we have hereunto set our hands and affixed our seals the date set forth below.

Inventor's Signature:	Susan Tripa Sukant Ti	thy ripathy (Deceased)	
State/Commonwealth of	Susan Tripathy, as Execu Admi	trix of the Estate of Sukant Trip	athy ₅ - 7-18-0≥
County of Midd	dlesex		
	before me the above-named bing instrument as his/her fre, 2002.	Susan Tripathy and acknown e act and deed this	vledged that day
(SEAL)	apple >	Notary Public	
	May she hall	(print name)	
	My Commission expires		

Inventor's Signature:
State/Commandation Sucharita Roy
State/Commonwealth
of Massachusetts
County of Middlesex
Then personally appeared before me the above-named Sucharita Roy and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this day of, 2002
(SEAL) July Notary Public
My Commission expires 06 / 07 / 2007.
Inventor's Signature:
Ramaswamy Nagarajan
State/Commonwealth /
ofMassachusetts
County of _Middlesex
Then personally appeared before me the above-named Ramaswamy Nagarajan and acknowledged that he/she executed the foregoing instrument as his/her free act and deed this
(SEAL) July Notary Public
My Commission expires <u>06/07/2007</u> .

Inventor's Signature: _	Sheeman
State/Commonwealth	Jayant Kumar
of Massachusett	s
County of Middlese:	x
Then personally appears he/she executed the fore ofJuly	ed before me the above-named Jayant Kumar and acknowledged that egoing instrument as his/her free act and deed this <u>second</u> day 20 02
(SEAL)	Tolla J. Horry Public
	/Lila A. Lorrey (print name)
	My Commission expires 06 / 07 /2007.
	<u> </u>
	A
Inventor's Signature:	
	Bon-Cheol Ku
State/Commonwealth	Bon-Cheol Ku
State/Commonwealth	
State/Commonwealth	Bon-Cheol Ku
State/Commonwealth of County of Then personally appeared ne/she executed the foregone	Bon-Cheol Ku d before me the above-named Bon-Cheol Ku and acknowledged that going instrument as his/her free act and deed this day
State/Commonwealth of County of Then personally appeared ne/she executed the foregot	Bon-Cheol Ku d before me the above-named Bon-Cheol Ku and acknowledged that going instrument as his/her free act and deed this day, 20
County of Then personally appeared	Bon-Cheol Ku d before me the above-named Bon-Cheol Ku and acknowledged that going instrument as his/her free act and deed this day

	Jayant Kumar
State/Commonwea	ılth
of	· · ·
	speared before me the above-named Jayant Kumar and acknowledged that the foregoing instrument as his/her free act and deed this day
(SEAL)	Notary Public
	(print name)
	My Commission expires/
Inventor's Signatur	e: Bon-Cheol Ku
	Bon-Cheol Ku
State/Commonwea	Bon-Cheol Ku 14445 MIS
State/Commonwea	Bon-Cheol Ku

Inventor's Signature:	Sov-Hyang Lee
	Soo-Hyoung Lee
State/Commonwealth	• •
of Massachusett	<u></u>
County of Suffolk	·
	before me the above-named Soo-Hyoung Lee and acknowledged regoing instrument as his/her free act and deed this, 20 <u>O</u> L
(SEAL)	Catherine Mata Michary Public
,	My Commission expires 03/08/2007